

Next-Generation Championship in Branch Prediction



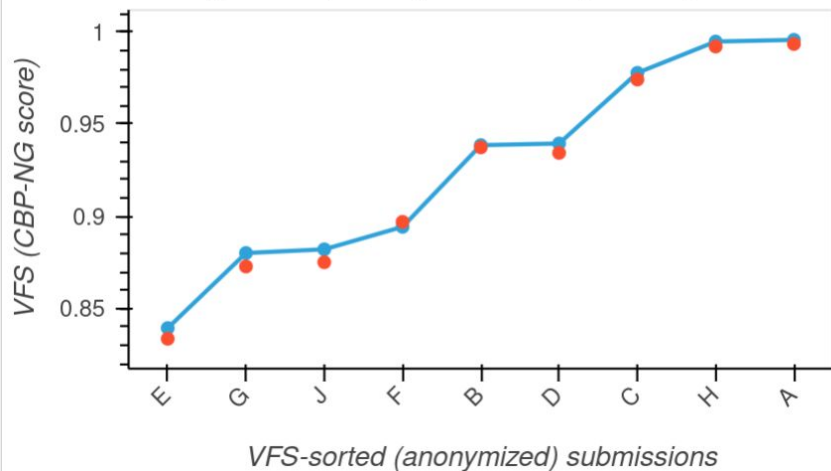
Awards and Closing Remarks by
Aaron Lindsay, Organizing Chair
June 28, 2026

Overview

1. Results overview
2. Awards
3. Wrap-up and Future
4. T-shirts

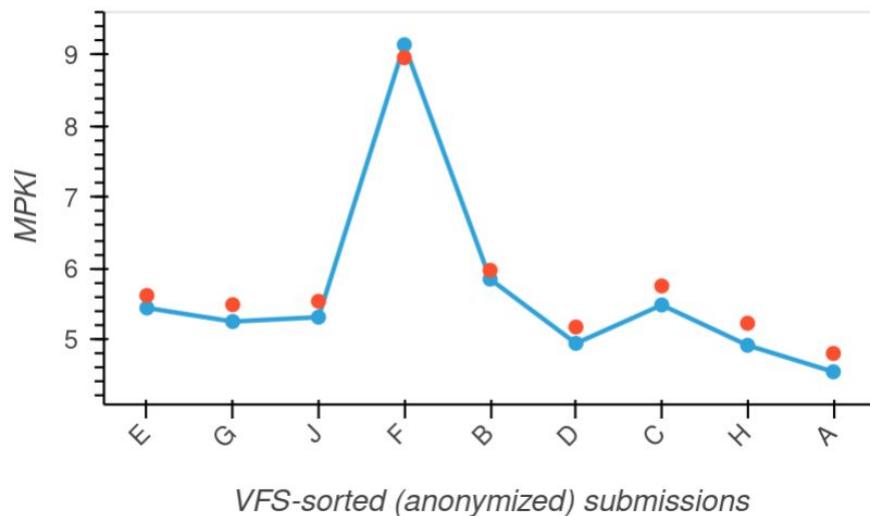
Championship Results

Voltage/Frequency-Scaled Speedup

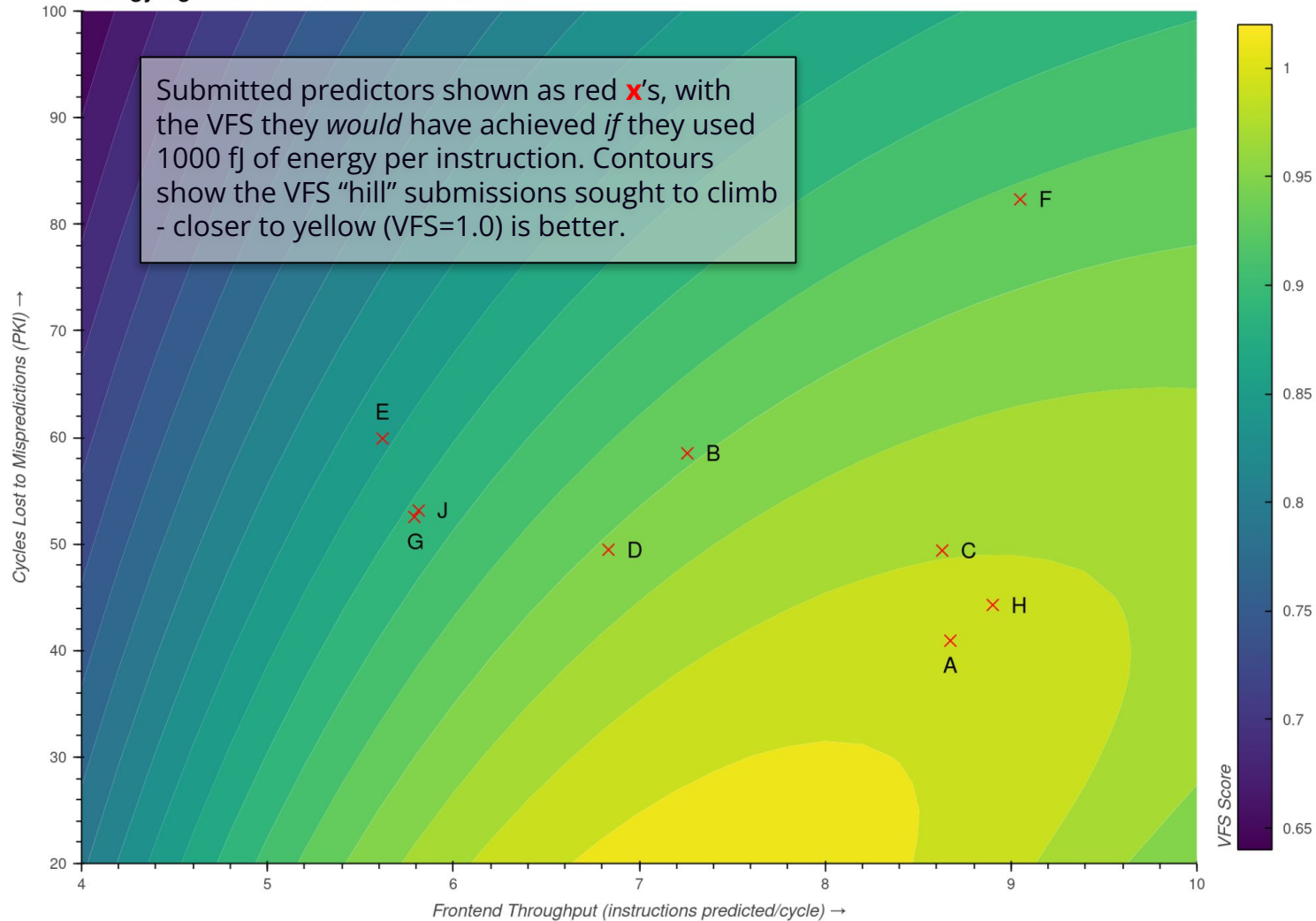


- scoring traces
- training traces

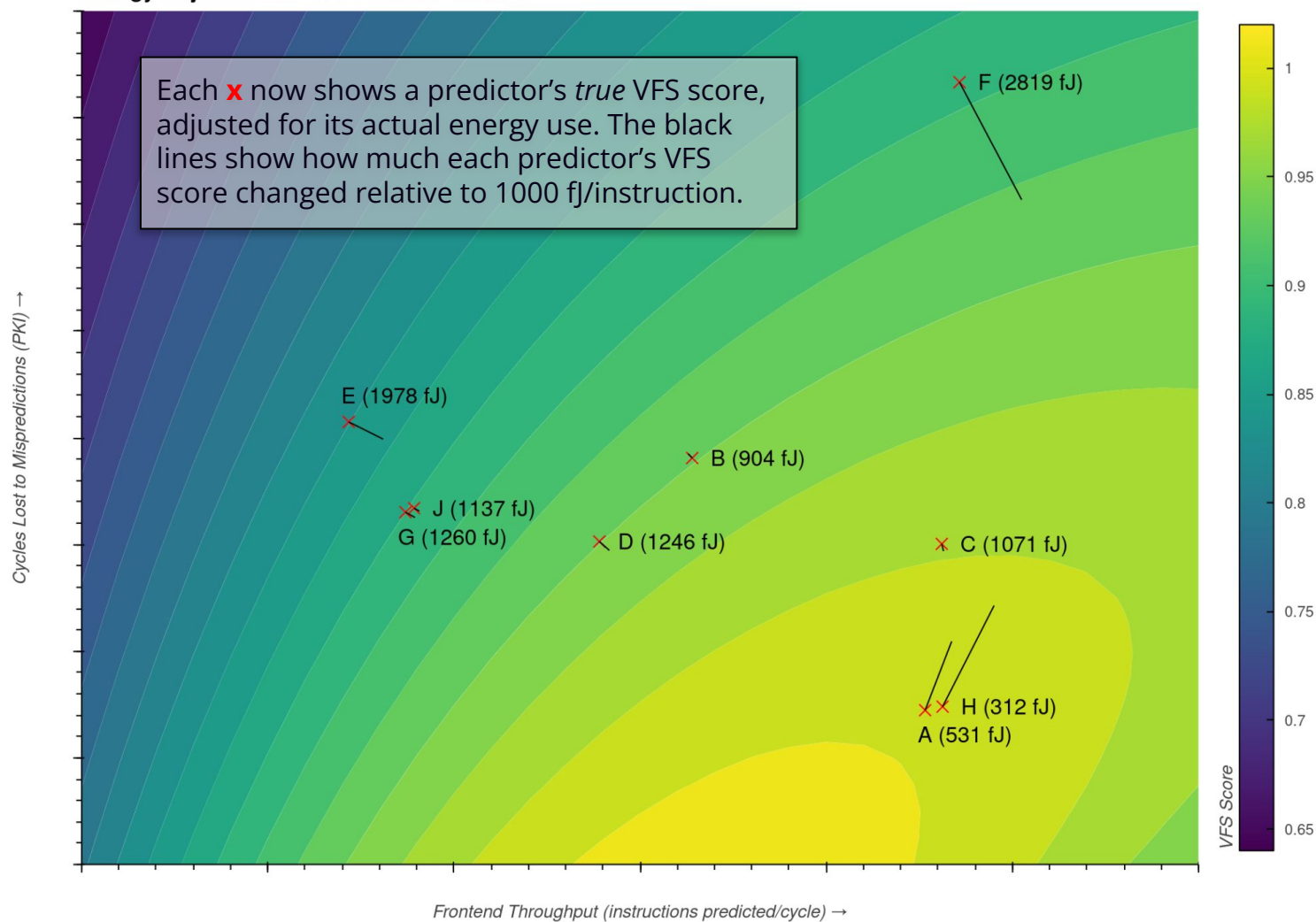
Mispredictions Per Thousand Instructions



Energy-Agnostic CBP-NG Predictor Results



Energy-Adjusted CBP-NG Predictor Results





Awards

Third Place Goes To...

Third Place Goes To...

Nhat Dang and Eric Rotenberg

for their entry titled

*An Energy-Efficient Ahead-Pipelined TAGE
Branch Predictor for CBP-NG*

(VFS of 0.9778)

Second Place Goes To...

Second Place Goes To...

Jun Fan

for their entry titled

*Enhance Ahead-Pipelined N-Branch
GShare with Tagged Tables*

(VFS of 0.9948)

First Place Goes To...

First Place Goes To...

**Toru Koizumi, Masanari Mizuno, Soma Nishida,
Kanata Abe, Tomoaki Tsumura, and Ryota Shioya**

for their entry titled

*MORSL: Minimal-Overhead Rank-Based Predictor
with Summation-Free Correction and Lazy Access*

(VFS of 0.9957)

CBP-NG Contributions & Learnings

- More-realistic search championships are possible!
- Energy changed the outcome
- Throughput and latency first-class citizens
- Independent derivation of industry features

Vision for the future:

new era of energy-efficient, realistic uarch championships

Our mission: *To boldly go where no micro-architectural
championship has gone before!*

What comes next?

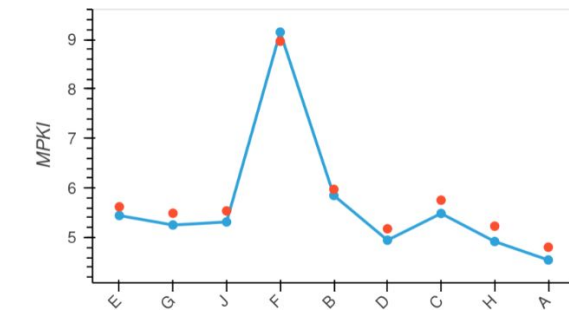
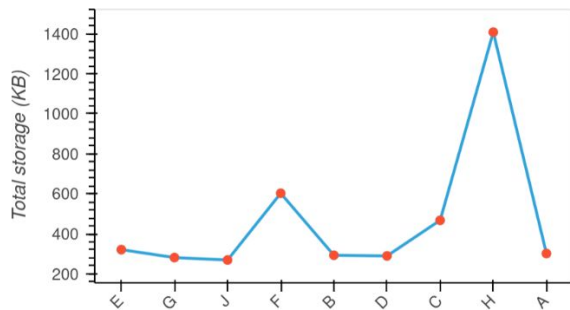
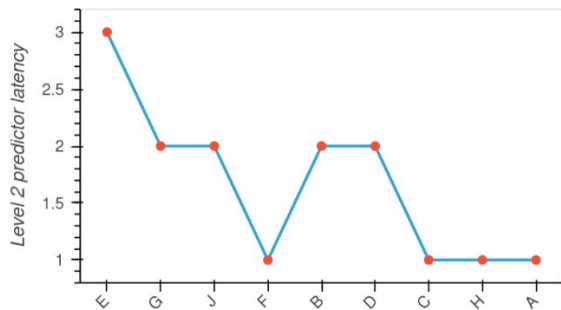
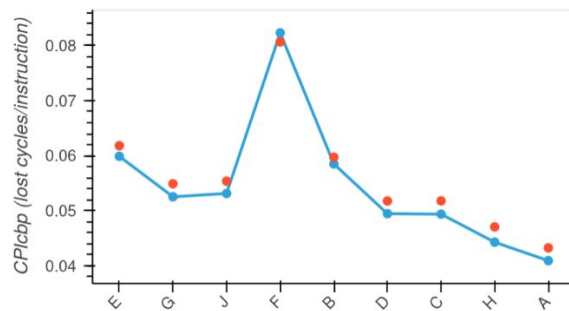
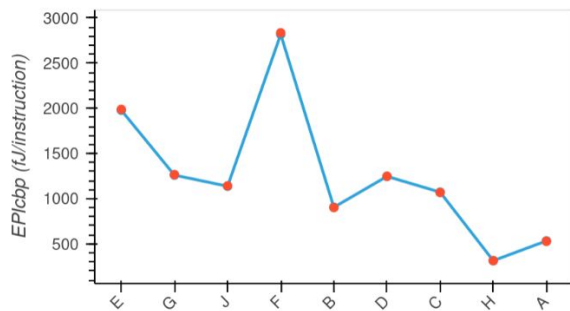
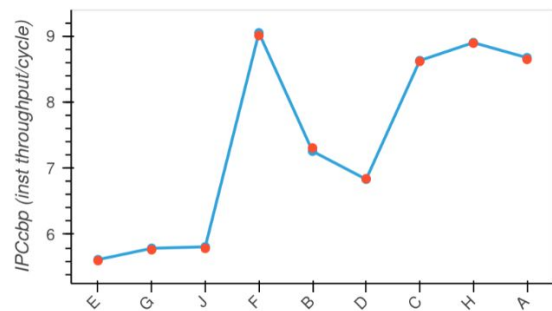
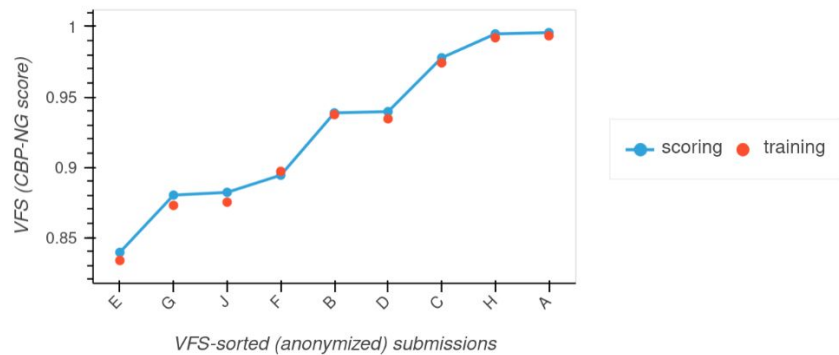


Thank You!

(And don't forget your t-shirt)

Backup...

All The Numbers!



Predictor ↔ Paper 'Key'

Letter Paper & Authors

- A MORSL: Minimal-Overhead Rank-Based Predictor with Summation-Free Correction and Lazy Access. Toru Koizumi, Masanari Mizuno, Soma Nishida, Kanata Abe, Tomoaki Tsumura, Ryota Shioya
- B Offset-Free TAGE-SC: Conditional-Branch-Level Prediction for Wide Fetch Frontends. Yashwant Kumar Balivada, Sairam Viswanathan Susarla
- C An Energy-Efficient Ahead-Pipelined TAGE Branch Predictor for CBP-NG. Nhat Dang, Eric Rotenberg
- D Coding Agents as Design Searchers: An Autonomous TAGE Tuning Campaign for CBP-NG. Matt Pallan
- F RABT - Run-Ahead Block TAGE. Prakhar Gupta, Yuwei Sun, Rishav Sen, Reet Sinha, Swetha Karthikeyan
- G Distilled Branch Predictors. Simha Sethumadhavan
- H Enhance Ahead-Pipelined N-Branch GShare with Tagged Tables. Jun Fan